



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

229

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 10/016,017 | 12/12/2001 | Sanjay Gopinath | NOVLP030/NVLS-000497 | 4132 |
| 22434 | 7590 | 08/09/2004 | EXAMINER | |
| BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778 | | | SCHILLINGER, LAURA M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2813 | |
| DATE MAILED: 08/09/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|---|--|--|--|
| <p style="text-align: center;">Office Action Summary</p> | Application No. 10/016,017 | Applicant(s) GOPINATH ET AL. | |
| | Examiner Laura M Schillinger | Art Unit 2813 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 17-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/3-12/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Stevens et al (US 2003/0121799).

Stevens teaches the following limitations as cited below:

1. An apparatus for providing a solid precursor to a surface of a work piece via a supercritical solution, the apparatus comprising:
a plurality of vessels for housing the solid precursor and allowing it to contact a solvent under supercritical or near supercritical conditions to generate a solution of the solid precursor (§ 0004-0005 and 0076);
a generator recirculation loop in fluid communication with the plurality of vessels and allowing the solution of the solid precursor to recirculate through the plurality of vessels, said solution being under supercritical or near supercritical conditions over its entire recirculation path (§ 0030 and 0107); and
a delivery mechanism adapted to deliver, under supercritical or near supercritical

Art Unit: 2813

conditions, a portion of the solution to a reactor for housing said work piece (§ 0355); wherein the solid precursor is a solid at or about standard temperature and pressure (§ 0364).

2. The apparatus of claim 1, wherein the solution is a saturated solution (§ 0355).

3. The apparatus of claim 1, wherein the delivery mechanism comprises a plurality of syringe pumps (§ 0086, 0362).

4. The apparatus of claim 3, further comprising a dilution mechanism for diluting the saturated solution with said solvent under supercritical or near supercritical conditions to produce a diluted solution of the solid precursor for delivery to the reactor (§ 0008).

5. The apparatus of claim 1, wherein the work piece is a partially fabricated integrated circuit (§ 0004-0005).

6. The apparatus of claim 2, wherein the generator recirculation loop comprises a pump for providing fluid flow and a valve for causing at least some fraction of the solvent to circulate through the plurality of vessels housing the solid precursor to ensure production of the saturated solution (§ 0060).

Art Unit: 2813

7. The apparatus of claim 4, wherein the dilution mechanism also comprises the plurality of syringe pumps(¶ 0086, 0362).

8. The apparatus of claim 4, wherein the dilution mechanism comprises a source of supercritical solvent for supplying the plurality of syringe pumps (¶ 0086, 0362).

9. The apparatus of claim 4, further comprising a reactor recirculation loop configured to allow recirculation of the diluted solution through the reactor under supercritical or near supercritical conditions (¶ 0107).

10. The apparatus of claim 9, further comprising a first fluid inlet, in fluid communication with the reactor, for supplying supercritical fluids to the reactor; and a first bleed valve, located downstream from the reactor (¶ 0087-0094).

11. The apparatus of claim 10, further comprising a by-pass line configured to allow isolation of the reactor from the reactor recirculation loop, thus forming a by-pass recirculation loop(¶ 0076/ ¶ 0096-0100).

12. The apparatus of claim 11, further comprising a second fluid inlet, in fluid communication with the by-pass recirculation loop, for supplying supercritical fluid directly to the by-pass recirculation loop (¶ 0076/ ¶ 0096-0100).

13. The apparatus of claim 12, wherein the second fluid inlet comprises a secondary

Art Unit: 2813

feed line which feeds from the first fluid inlet (§ 0087-0094).

14. The apparatus of claim, 13 further comprising a second bleed valve, located downstream from the reactor and the first bleed valve (§ 0087-0094).

15. The apparatus of claim 9, wherein the reactor recirculation loop provides flow of the diluted solution through the reactor at between about 50 and 200ml per minute (§ 0254).

16. The apparatus of claim 1, wherein components of the apparatus comprise at least one of hastalloy, stainless steel, and inconel (§ 0066)

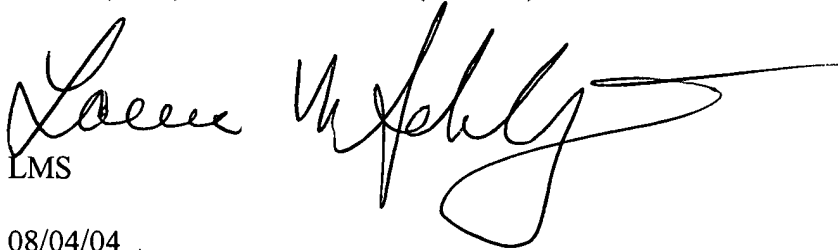
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M Schillinger whose telephone number is (571) 272-1697. The examiner can normally be reached on M-T, R-F 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2813

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LMS

08/04/04